



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,924	02/01/2006	Steven Ian Pegg	P/63927	1175

156 7590 03/28/2007
KIRSCHSTEIN, OTTINGER, ISRAEL
& SCHIFFMILLER, P.C.
489 FIFTH AVENUE
NEW YORK, NY 10017

EXAMINER

LAM, HUNG Q

ART UNIT	PAPER NUMBER
----------	--------------

2883

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/566,924	Applicant(s) PEGG, STEVEN IAN	
	Examiner Hung Lam	Art Unit 2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of the Application

Claims 1-7 are canceled.

Claims 8-14 are pending in this application.

If applicant is aware of any prior art or any other co-pending application not already of record, he/she is reminded of his/her duty under 37 CFR 1.56 to disclose the same.

Information Disclosure Statement

There was no information disclosure statement (IDS) submitted by the applicant.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in Application No. 10335419.3, filed on August 02, 2003.

Drawings

The drawings submitted on February 01, 2006 are accepted as part of the formal application.

Specification

The specification is accepted as part of the formal application.

Applicant cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the

invention. For instance, line 2 of claim 8 with the phrase "...an outcoupling filter for decomposing and incoming wavelength multiplex..." is considered to be vague and indefinite because it fails to give understanding to what exactly the applicant is claiming.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. For instance, claim 11 cite the limitation "...the channels include..." in line 2. There are multiple "channels" in claim 8. Therefore, the applicant fails to point out which channel the applicant referring to.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 8-9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Margalit** (US. Pat. 6,839,482).

Regarding claim 8, Margalit discloses a tunable optical filtering device or a tunable frequency-selective optical unit comprising:

- A filter grating structure with a first filter RG1 for separating an input 101 of multi-channel wavelength of light signal into a first and second group of channels such as first light component and second light component (col. 2 lines 55-67, col. 3 lines 1-5, and Fig. 3).
- A closed loop resonators for carrying out a processing of resonant the first group or the first light component; and a second filter RG2 for combining the processed first group of light component with the second group of light component into the output path 102 of multi-channel wavelength (col. 3 lines 5-9, col. 5 lines 1-6, and figure 3 and 4).
- The first filter RG1 and the second filter RG2 continuously operating with the closed loop resonators R1, R2 wherein the first light component having a specific frequency range (channels) will be propagated into the first optical path W2, and the second light component including a remaining portion of the input signal will be reflected into the second optical light path W1 to the output light path 102 (col. 4 lines 58-65, col. 5 lines 1-6, and figures 3 to 4).
- After passed through the closed loop resonators (processing unit), the first light component back to the first-stage filtering and to be directed into the optical light

path W1 or passing/output direction of the second light component (col. 3 lines 9-16, and col. 5 lines 1-6).

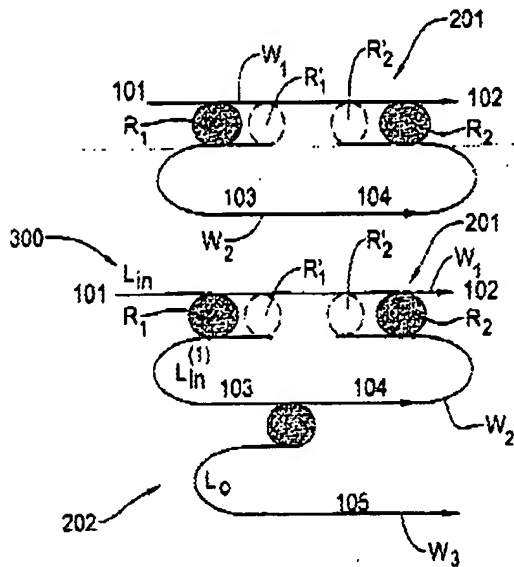


FIG. 3

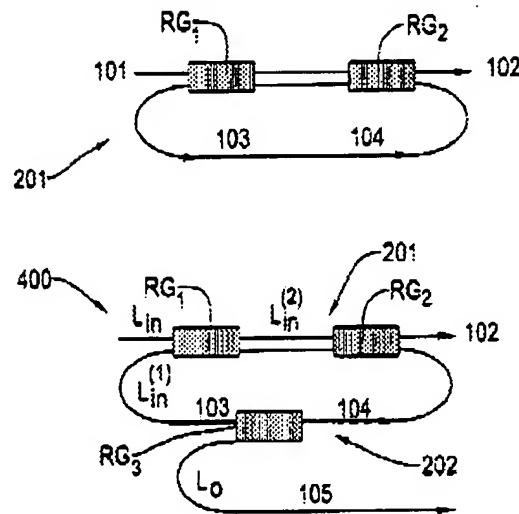


FIG. 4

Reproduced from US. Pat. 6,839,482.

Margalit does not explicitly disclose an outcoupling filter and an incoupling filter that both used to form a common continuous wavelength-selective reflecting structure. However, **Margalit** teaches the tunable filtering device comprise the first filter RG1 and second filter RG2 in combining with the closed loop resonators R1, R2 wherein “the first and second tuning ranges are such as to provide overlapping between the optical spectra of the first and second filter structures” (col. 3 lines 9-11). This device has an equivalent structure known in the art. Therefore, because of these two of the first filter RG1 and the second filter RG2 were art-recognized equivalent at the time the invention was made, there is a reasonable motivation to one of ordinary skill in the art would have found it obvious to substitute these filters for the outcoupling filter and the incoupling filter, since these filter performing the same function as the outcoupling filter and the incoupling filter of the claimed invention.

Reproduced from US. Pat. 5,307,428.

It would have been obvious to the one having ordinary skill in the art at the time the invention was made to use the teachings of **Blow et al.** to modify the device of **Margalit** in order to construct the tunable optical filtering device or a tunable frequency-selective optical unit with the dichroic optical coupler. The motivation for doing so because of this dichroic optical coupler operates same as the dichroic mirror, and this dichroic optical coupler is also configured "... as possible for maximum efficiency and completeness of switching" (Blow et al. col. 3 lines 59-66).

Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Margalit** (US. Pat. 6,839,482) in the view of **Ryu et al.** (US. Pat. 6,222,670).

Regarding claim 12, in accordance with the rejection of claim 8, **Margalit** discloses claimed invention except for the limitation of at least one optical amplifier stage passed through by the entire incoming wavelength multiplex.

Ryu et al. disclose an erbium doped fiber amplifier comprising first and second stages (EDF1 and EDF2), wherein the first stage EDF1 is connect to a coupler 22 (Fig. 3).

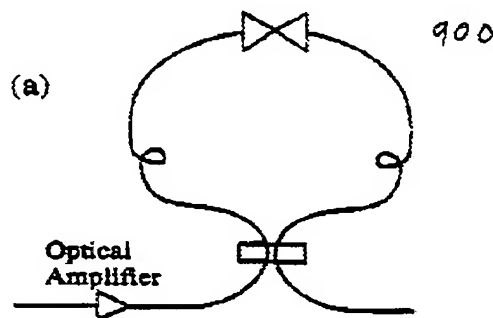
It would have been obvious to the one having ordinary skill in the art at the time the invention was made to use the teachings of **Ryu et al.** to modify the device of **Margalit** with at least one optical amplifier stage passed through by the entire incoming wavelength multiplex. The motivation for doing so because of the optical amplifiers EDF1 and EDF2 are used "...for providing enhanced power conversion efficiency by utilizing amplified spontaneous emission as a secondary pumping light source" (Ryu et al. col. 1 lines 17-19) as "...provides an amplification gain in the higher wavelengths" and "...operating in a L-band range with enhanced power conversion efficiency and/or with optimized noise figure" (Ryu et al. col. 2 lines 1-2 and lines 18-19).

Regarding claim 13, in accordance with the rejection of claim 12 the optical amplifier described above is an erbium doped fiber therefore it will let the light signal pass (transparent) by in an unpumped stage.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Margalit** (US. Pat. 6,839,482) in the view of **Islam** (US. Pub. 2004/0091204).

Regarding claim 14, in accordance with the rejection of claim 8, **Margalit** discloses claimed invention except for the limitation of that device is a regenerating amplifier for an optical long distance cable.

Islam discloses an optical loop mirror in a regenerator system, wherein the loop comprises an optical amplifier in a relation with the length of the optical fiber cable over the long distance in the optical networks system ([0016], [0092]).



Reproduced from US. Pub. 2004/0091204.

It would have been obvious to the one having ordinary skill in the art at the time the invention was made to use the teachings of **Islam** with **Margalit** in order to provide the regenerating amplifier to an optical long distance cable. The motivation for doing so because of the optical amplifier in the regenerator system is use to boost the optical signal to a certain level of

signal to noise ratio that transmitting in the optical fiber cable over the long distance in the optical networks system (Islam, [0011], [0016], [0092]).

Cited Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Amersfoort et al. (US. Pat. 5,748,811), disclose a optical switch comprising first star coupler 138 and second star coupler 142 with multimode interference filters 136 and 143; a feed back waveguide loop with plurality waveguide and a switch able on/off amplifier 156; a grating section 140, and a DBR (distributed Bragg reflector) (col. 15 lines 1-30, col. 18 line 30, and Fig. 13).

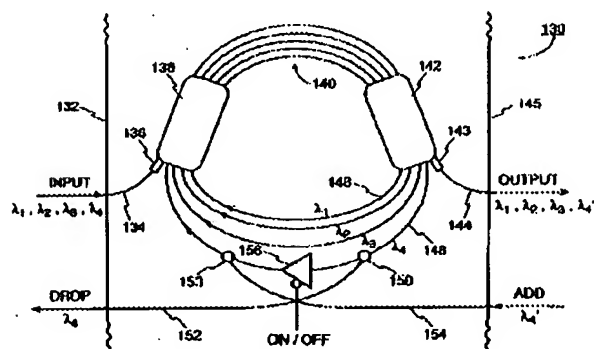


FIG. 13

Reproduced from US. Pat. 5,748,811.

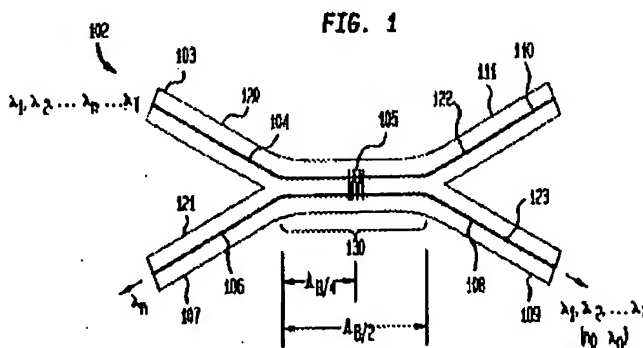


FIG. 2

Reproduced from US. Pat. 5,574,807.

Snitzer (US. Pat. 5,574,807), disclose a communication system of add/drop coupler device comprising a coupling region formed from two single mode waveguides where also a Bragg grating 105 is disposed at this coupling region in each of the waveguide. The device is used to for use in adding or dropping light signals at predetermined center wavelengths to or from a wavelength division multiplex, fiber optic transmission system ("abstract", Fig. 1)

Conclusion

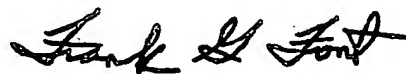
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Lam whose telephone number is 571-272-9790. The examiner can normally be reached on M - F 07:30 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Hung Lam,
Assistant Examiner
Tel.: 571-272-9790



Frank G. Font
Supervisory Patent Examiner
Technology Center 2300